



UNITED STATES PATENT AND TRADEMARK OFFICE

14.3
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 10/537,770 | 10/25/2005 | Graham Paul Hopkins | 41557-218983 RK | 4866 |
| 26694 | 7590 | 11/06/2007 | EXAMINER | |
| VENABLE LLP | | | TANINGCO, MARCUS H | |
| P.O. BOX 34385 | | | ART UNIT | PAPER NUMBER |
| WASHINGTON, DC 20043-9998 | | | 2884 | |
| MAIL DATE | | DELIVERY MODE | | |
| 11/06/2007 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/537,770 | HOPKINS ET AL. | |
| | Examiner | Art Unit | |
| | Marcus H. Taningco | 2884 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 August 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1 and 4-18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 June 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 6, and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (US 5,060,508) in view of Karlsson et al. (*Karlsson*, US 6,046,814).

With regards to claim 1, Wong discloses a gas sample chamber comprising: a body (22), on which is mounted an optical source (12) on a first end and a detector (26) on a second end, the body further comprising passages (*channel*) (30) to admit gas (column 3, lines 40-45), the passages further comprising a passage (*elongated groove*) (20) having reflective surfaces defining a folded (Figs. 1-5) optical path for light from the source (column 3, lines 27-34). The gas sensor taught by Wong lacks a second detector to detect light from the source that has been

tapped off partway along the passage. Karlsson, however, teaches a gas sensor comprising a source (1) on a first end and a first detector (9a) and a second detector (9b) located at a second end of a channel (Figs. 4 and 5). Karlsson teaches that the second detector is used as a reference detector wherein the gas concentration is measured on the basis of the relationship between sample and reference signals. As such, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Wong with a reference detector in order to determine a gas concentration while compensating for factors such as noise.

With regards to claim 4, Karlsson teaches said second detector in connected to the channel by an optical pathway arranged to redirect a portion of light from a predetermined region of the channel to the second detector (Figs. 4 and 5).

With regards to claims 5 and 7-10, Wong discloses said elongated groove forms a serpentine path. Wong realizes that a long path length is more suitable for the measurement of very low concentrations of gasses (column 2, lines 18-21). With regards to the specific requirements of the path, those skilled in the art appreciate that, absent some degree of criticality, the shape and location of the path would have been a matter of routine design choice that would have been within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

With regards to claim 6, Wong discloses said groove forms a serpentine path (Fig. 2).

With regards to claims 11-13, Wong discloses a gas sample chamber comprising: a body (22), on which is mounted an optical source (12) and a detector (26). Wong fails to teach at least one wall extending transversely from the plane of the base. Instead, Wong discloses an elongated groove (20) formed on the same plane as the optical source and detector. It would have been an

obvious matter of design choice to provide at least one wall extending transversely from the plane of the base, since applicant has not disclosed that said wall solves any stated problem or is for any particular purpose and it appears that the invention would work equally well with the elongated groove formed on the same plane as the optical source and detector.

With regards to claim 14, Wong discloses a gas sensor comprising two halves (Figs. 2 and 4), said halves comprising channels. Although Wong fails to specify a cover for the channel, Wong does suggest that the channel could be machined into only one of the halves, leaving the second half to function as a cover for said channel, said cover comprising gas admittance means (30) (column 4, lines 1-5). As such, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Wong with a cover in order to shield the channel from external light.

With regards to claim 15, Wong discloses both halves having reflective interior coatings (column 4, lines 20-25).

With regards to claims 16 and 17, Wong discloses diffusing gas into the channels through a number of passages (*gas admittance means*) (30), but fails to specify the specific requirements of said passages. Nevertheless, those skilled in the art appreciate that sintered filters are well known and conventionally used to diffuse gas into a sample chamber while filtering out particulates that may interfere with the absorption of light by the sample gas, and is therefore viewed by the Examiner as a matter of routine design choice.

With regards to claim 18, Wong discloses an infrared optical source (column 2, lines 34-37).

Response to Arguments

Applicant's arguments filed 08/27/2007 have been fully considered but they are not persuasive. Applicant's argument that prior art fails to teach the specific requirements of a second detector has been addressed above and is rejected accordingly.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus H. Taningco whose telephone number is (571) 272-1848. The examiner can normally be reached on M - F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Taningco
Patent Examiner
GAU 2884



D. PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800